INF 117
Project in Software Engineering

Lecture Notes ~Spring Quarter, 2008

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Set 1 –Administrative, Deliverables, & Intro to Requirements

Today

k Class Information
- Introductions
- Course Materials
- Class Links & Policies
- What is INF 117?
- Grading

k Working in a Team

k Artifacts (a.k.a. what you'll need to turn in)

k What you'll need to do this week

k Defining Roles in a Team

Course Schedule

k Lecture
- MWF: 10a – 11:20a – DBH 1425

k Discussion
- Fri 2p-2:50p – ICS 180
- Reader Feedback

k Labs
- MWF: 1p-1:50p – ICS 193
- MWF: 3p-3:50p – ICS 193
- Can use for team meetings/Co-locating

Introductions

k Michele Rousseau
- Email: michele@ics.uci.edu
  - Please put INF117 in the Subject
  (For a more prompt response)

- Website:
  http://www.ics.uci.edu/~michele
- Office Hours: by appointment
- Office: Bren Hall: 5204

Class Links

k Class Website
- http://www.ics.uci.edu/~michele/Teaching/INF117-S08

k Can access class site from my home page
- http://www.ics.uci.edu/~michele

k Survey
- http://eee.uci.edu/survey/INF117S08
- Due Today!!

Class Policies

k Add / Drop Policy
- DEADLINE: This Wednesday!

k Please use your UCI account
- This is for your privacy

k Questions of general interest will be forwarded to the class
- if you don't want it forwarded for some reason please let me know

k If you need accommodations due to a disability, please let me know

Check the Website for More Details

Course Materials

- **k** No New Texts
- **k** Required Readings
  - Will be announced on the website and in lecture
- **k** Use Tools from Prior Classes
  - Apply your knowledge!

- **k** Use whatever is available to you!
  - Learn new tools from
    - Your teammates
    - The web
    - Your Client

- **k** Be Proactive in your Learning

Prerequisites

- **k** ICS 51
- **k** ICS 52
- **k** Inf 101 / CS 141 / CSE 141
- **k** Inf 111/CSE 121
- **k** Math 2A-B
- **k** Stats 67 / Math 67
- **k** Please let me know if you have not satisfied these requirements

Completed with a C or better

What is INF 117?

- **k** Project class
  - Your project is to complete a software system (specs through testing – including documentation) for an external client

- **k** The opportunity to apply your skills in a "real" real-world project, using concepts learned in:
  - ICS 52
  - INF 101/ CS 141 / CSE 141
  - INF111/CSE121/ICS121
  - *Let me know if you have not taken any of these classes

- **k** Special emphasis on
  - Teamwork
  - Careful planning
  - Techniques for working with large systems

MUST be able to work in a team!

What is INF 117? (2)

Real-World Projects

- **k** This class is demanding but...
  - Potential for internships
  - Jobs
  - Letters of Rec.

Team Emphasis

  - How are teams determined?
  - Survey (Due Today)

Expectations

- **k** Complete the Software Process
  - Specification
  - Design
  - Implementation
  - Testing

- **k** Complete all Associated Documentation... (Product & Team)

- **k** Be Professional

- **k** Work in a team

Working in a Team

To be successful:

- **k** Be a Leader

- **k** Be Pro-active – Take Initiative

- **k** Plan Carefully / Appropriately

- **k** Attend all Meetings
  - Come Prepared
    - Read the Agenda
    - Have something to say about each item

Working in a Team (2)

- **k** Manage your Time & your Team's time
  - Don't Procrastinate
    - Hurts your team
    - Creates stress
    - Creates hard feelings

- **k** Handle conflicts early – be nice
  - Discuss issues/concerns with me

- **k** The more successful teams tend to have *every* member involved in *every* phase

Deliverables & Deadlines

- **k** Many Deliverables (every week)
  - Some "big" – Some not so big
  - Important to stay on time

- **k** Due Dates are "Latest"
  - Late Penalties
    - 2% / Day for 1st and 2nd Iterations
    - 4% / Day for final iterations

Calendar Available Online

Deliverables & Deadlines (2)

- **k** If you have to learn new skills
  - start working on them now
    - Use your resources
      - Teammates
      - Other people in class
      - Books
      - The Web
      - Whatever you can…
  - don't wait until the phase that you need them

- **k** This class demands 10-20 hrs a week (per person)

How are you Evaluated?

Team Component (2/3 – 3/4 of your grade)

- **k** Anything Team Related…
- **k** Overall Project
  - Main Deliverables
    - Requirements, Design, Implementation, & Testing
  - Other Deliverables
    - Team Website
    - Minutes
    - Team Logs
- **k** Ability to Work Successfully as a Team
- **k** Professionalism
- **k** Presentations

To pass your *team* must complete & deliver the product!

How are you Evaluated? (2)

Individual Component (1/3 – 1/4 of your grade)

- **k** Attendance & Participation
  - Class & Discussion
  - Peer Evaluations
- **k** Team Appraisals
- **k** Course Logs
- **k** Class Presentations
  - For each Deliverable
- **k** Ability to Work & Promote the Team
- **k** Quality of all other work
- **k** Professionalism

Artifacts

(aka things you'll need to turn in)

Artifacts

k Team Website
k Course Logs
k Team Logs
k Team Appraisals
k Presentations / Slides
k Minutes
k Peer Evaluations

k Project Plans
k Requirements
k Design
k Implementation
k Test Plans

Team Website

k Each Team will have a team website.

k Make sure that you **DO NOT** include anything that violates a non-disclosure agreement you may have with your client.

What should be included?
k Project overview/Intro
  • who are you
  • who is your client
  • what problem are you solving and how are you solving it

Team Website (2)

k Regularly scheduled meeting times and locations
  • 3x a week for the team and 1x a week for the client)

k Deliverables
  • Requirements
  • Design
  • Code
  • Test Plans
  • Presentation Slides
  • Minutes
  • Team Logs,
  • and etc. ~~ everything except Team Appraisals and Peer evaluations)

Team Website (2)

k Calendar

k Updates (should be posted regularly)

k Message Board (optional ~ but strongly recommended)

k Contact Information (optional)

Meetings & Agendas

Always have an agenda
k Purpose: Keeps meetings on track & organized

k Should define the objective of the meeting?

What should it contain?
k Main discussion points
  • Level of detail is up to you

k Who is responsible for it?
  • Phase lead (with input from all team members)

Meetings & Agendas (2)

k Should be posted at least a few days before the meeting.
  • *Each* team member should...
    ▫ Review it

    ▫ Provide feedback
      • Should some agenda items be added?
      • Should some decisions be put off until later?

    ▫ Prepare for the meeting
      • Come prepared to contribute – for each agenda item – *Be Pro-active*

Meetings / Minutes

Purpose: Provides a history of the project

- Why decisions were made and when
- What ideas were discussed and by whom
- Fills in others on what is going on.. What went on.. Why things were done

k Minutes should be taken at each meeting
- By someone other than the lead
- Team & Client Meetings

Meetings / Minutes

What to Include...

k Date, Time & Duration, Location

k Who was present / who was absent and why

k The Agenda

k For each agenda point...
- Ideas discussed – who contributed what
- Include a variety of ideas (brainstorm)
- What was the Conclusion (what did you decide to do)

k Include any tasks assigned (with deadlines)

k Basic agenda for the next agenda should be decided upon at the end of the meeting

k Best to make up a simple template to fill out

Example Minutes

k Meeting Date/Time/Place
- Monday, March 31st
- 1p–5p – 4 hours ~~~ working meeting
- Ada's house

k Present

Ada Byron
Grace Hopper (Lead)
David Redmiles~ Late (Traffic accident made him late)

Absent

Joe Namoth * (had a work conflict and we could not schedule around it because Ada &
    Grace could not come later ~ Did not want to postpone because of deadline)

Example Minutes (2)

k Agenda
- First Agenda Item
  - Some details
- Second Agenda Item

k Discussion, decisions, assignments
- **First agenda item.**
  - Ada suggested xxxx
  - Grace suggested yyyyyyyyy
  - David said to maybe combine xxx & yyy
  - Decided to go with xxx & yyy combo idea because... (justification)
- **Second agenda item.**
  - Xxxxxxxxxx Yyyyyyyyyyy. Zzzzzzz
- etc......

Example Minutes (3)

k Task Assignments
- David will complete the xxxxx by Friday.
  - By Wed. he should have yyyyy complete
- Ada will update Joe on this meetings and complete the yyyyy

k Tentative agenda for the next meeting
- Xxxxxxxxxxxxxx Yyyyyyyy Zzzzzzzzzzzz

k Today we accomplished Xxxxxx
- Grace completed Zzzzzzzzzzzz
- David completed Yyyyyyyyy
- Ada completed Aaaaaaaaaaaaaaa

Course Logs

k Due at *least* 2x a quarter

k Do *every time* you sit down to work

k Purpose:
- Improve your own productivity
- Improve your process
- Become a better estimator of time
- Track your errors
  - Discover areas you need to improve upon

Course Logs (2)

- **k** 3 Types of Entries
  - A *description* records an activity
    - most common
  - An *explanation* says **why** something happened
  - A *prescription* is a **plan** for something to do later

- **k** With the latter 2
  - Reflect & think about what is going on

Course Logs (3)

- **k** Time should be associated with each description
  - Start Time
  - End Time
  - Duration (round to nearest quarter of hour)

- **k** Record your Errors – Indicate how much time they consume!
  - Discover areas you need to improve upon

- **k** When should you do this?
  - Every time you sit down to work (can include meetings and whatnot)

- **k** For each phase or task total up your time

Team Logs

- **k** A Summary of Individual Logs
- **k** Due every two weeks

Team Appraisals

- **k** Be Honest!
- **k** Provide as much detail as possible

- **k** Do Not Submit On the Web

- **k** Either e-mail them *prior* to the due date or bring them to class on the due date

Team Appraisal Forms

- **k** Divide 100 pts between your teammates based on participation
- **k** Be Constructive
- **k** Comment on performance based on
  - Competence: possesses or seeks required knowledge
  - Effort: tries to accomplish assigned tasks
  - Productivity: level of work generated
  - Creativity: conceptualized usful, innovative approaches
  - Quality: demonstrates accuracy and thoroughness
  - Dependability: follows through on responsibilities
  - Communication: listens, expresses ideas/concepts
  - Initiative: seeks out new assignments
  - Decision making: sets objectives, evaluates alternatives
  - Leadership: fosters good teamwork, solves team problems

Template is on the website

Presentations

Presentations for each Deliverable (4)

- **k** 10-15 minutes presentations on
  - Requirements
  - Design
  - Implementation
  - Testing

Showcase event Practice Talks (2-3)
  - 3-4 Minute Talks
  - 5 Minute Presentations
  (Will cover details as we get closer to the end of the quarter)

Post Slides to the Website

Major Deliverables

k Iterative method of s/w dev.
- 3 iterations for each major deliverable
  - Req, Des, Implementation
- Provide 1-2 page Exec. Summary for each iteration
  - 1st two Iterations
    - Reviewed – not graded
- 2nd & 3rd iterations should be accompanied by a list of sections modified

k Project Plans & Test Plans have 4 Iterations

This Week

k Survey should be completed today at 5p
- Make sure that schedule is times you *absolutely can't* meet

k Read the Website‼

Clients will present on Wednesday
- SCE, SVI Media, Clupedia, Teresis
- Take notes...
- Let me know which project you are interested in

k Teams will be assigned no later than Friday

Once your team is assigned (this week)

k Meet with your team as soon as possible!
- Arrange regularly scheduled meetings & locations
  - 3x a week – same time – same location
  - Exchange contact information
  - Determine leads for each phase
  - Discuss your roles (strengths & weaknesses)

k Set up first meeting with you client ASAP
  - Decide on regular client meetings

k Get working on your website

Not to state the obvious...

k Be dependable, on time, and courteous

Defining roles in you team

k For each phase the team must have a "lead"
- What should the Lead do? Roughly...
  - Organize meetings / Keep meetings moving
  - Define agenda
  - ... beyond that is team dependent
  - Everyone else should be contributing to ideas and whatnot ~~~ take turns in the meeting
  - Choose an appropriate time to lead (know your strengths)

Defining roles in you team(2)

k Overall Equal distribution of workload
- Co-locate (labs, laptops, etc...)

- Some will have all members work equally throughout... others may not..
  - ... all should be involved at some level in each phase
  - Determine each members strengths / weaknesses
  - ... know yours!

Requirements Engineering

3 Iterations
Read links on website under Requirements Engineering

Requirements Engineering

k 3 Iterations
- 1st Iteration
  - Wish List (May need to be scaled)
  - Analysis need to be done
- 2nd Iteration
  - Complete
  - Further Analysis
- 3rd Iteration
  - Minor changes based on customer feedback

k We Will use UML in this class
- Use diagrams effectively
  - Explain them
  - Diagrams should clarify!
  - Don't drive your documents by the diagram